

Figure 1

Operation	Stage 1	Stage 2	Stage 3
0	0, 16, 32, 48	0, 4, 8, 12	0, 1, 2, 3
1	1, 17, 33, 49	1, 5, 9, 13	4, 5, 6, 7
2	2, 18, 34, 50	2, 6, 10, 14	8, 9, 10, 11
3	3, 19, 35, 51	3, 7, 11, 15	12, 13, 14, 15
4	4, 20, 36, 52	16, 20, 24, 28	16, 17, 18, 19
5	5, 21, 37, 53	17, 21, 25, 29	20, 21, 22, 23
6	6, 22, 38, 54	18, 22, 26, 30	24, 25, 26, 27
7	7, 23, 39, 55	19, 23, 27, 31	28, 29, 30, 31
8	8, 24, 40, 56	32, 36, 40, 44	32, 33, 34, 35
9	9, 25, 41, 57	33, 37, 41, 45	36, 37, 38, 39
10	10, 26, 42, 58	34, 38, 42, 46	40, 41, 42, 43
11	11, 27, 43, 59	35, 39, 43, 47	44, 45, 46, 47
12	12, 28, 44, 60	48, 52, 56, 60	48, 49, 50, 51
13	13, 29, 45, 61	49, 53, 57, 61	52, 53, 54, 55
14	14, 30, 46, 62	50, 54, 58, 62	56, 57, 58, 59
15	15, 31, 47, 63	51, 55, 59, 63	60, 61, 62, 63

↑ ↑ ↑ ↑
 32 30a 34 30b 30c

Figure 2

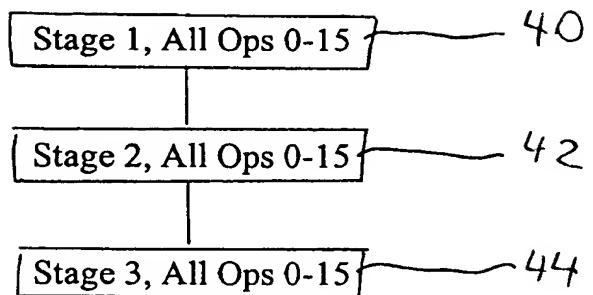


Figure 3A

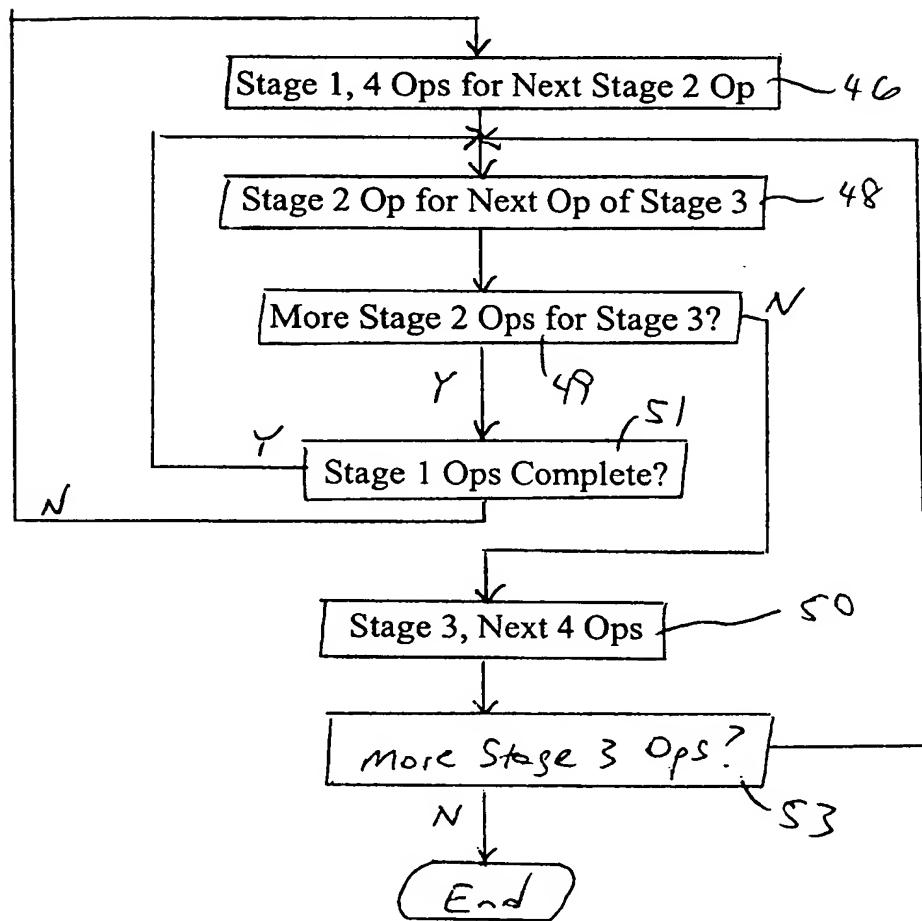


Figure 3B

	68														66							70						
	66							70							68							68						
Bank 1 Read	0	32	17	49	2	34	19	51	20	52	5	...	47	0	8	5	13	2	10	7	...	0	2	5	7	8	10	13
Bank 2 Read	16	48	1	33	18	50	3	35	4	36	21	...	63	4	12	1	9	6	14	3	...	1	3	4	6	9	11	12
Bank 1 Write	0	32	17	49	2	34	19	51	20	...	62	15	47	0	8	5	13	2	...	51	59	0	2	5	7	8		
Bank 2 Write	16	48	1	33	18	50	3	35	4	...	46	31	63	4	12	1	9	6	...	55	63	1	3	4	6	9		
Stage 1 Op	(0)	(0)	(1)	(1)	(2)	(3)	(3)	(4)	(4)	...	(15)	15	D	D	D	D	D	D	D	D	D	D	D	D	D	D		
Stage 2 Op										...	(0)	(0)	0	(1)	1	(2)	(2)	...	15	D	D	D	D	D	D	D		
Stage 3 Op										...									(0)	(0)	0	(1)	1	(2)	2			
Clock Cycle	1	2	3	4	5	6	7	8	9	10	11	...	32	33	34	35	36	37	38	39	...	65	66	67	68	69	70	71

↑ 60 62 64
↑ 60 62 64

Figure 4A

	78														76							80						
	76							80							78							78						
Bank 1 Read	16	48	4	36	24	56	12	44	4	12	1	33	21	53	9	41	29	61	1	13	18	...	1	3	4	6	9	10
Bank 1 Write	0	32	20	52	8	40	28	60	0	8	17	49	5	27	25	57	13	45	5	...	7	15	0	2	5	7		
Bank 2 Write	16	48	4	36	24	56	12	44	4	12	1	33	21	53	9	41	29	61	1	...	3	11	1	3	4	6		
Stage 1 Op	(0)	(0)	(1)	(4)	(4)	(8)	8	(12)	12	(1)	(1)	1	(5)	5	(9)	9	(13)	13	(2)	(2)	...							
Stage 2 Op										...	(0)	(0)	0									(1)	(1)	1	...	3		
Stage 3 Op										(0)	(0)	0	(1)	1	(2)
Clock Cycle	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	...	41	42	43	44	45	46

↑ 62 ↑ 70 ↑ 72
↑ 60

↑ 62 ↑ 70 ↑ 72
↑ 74 ↑ Figure 4B

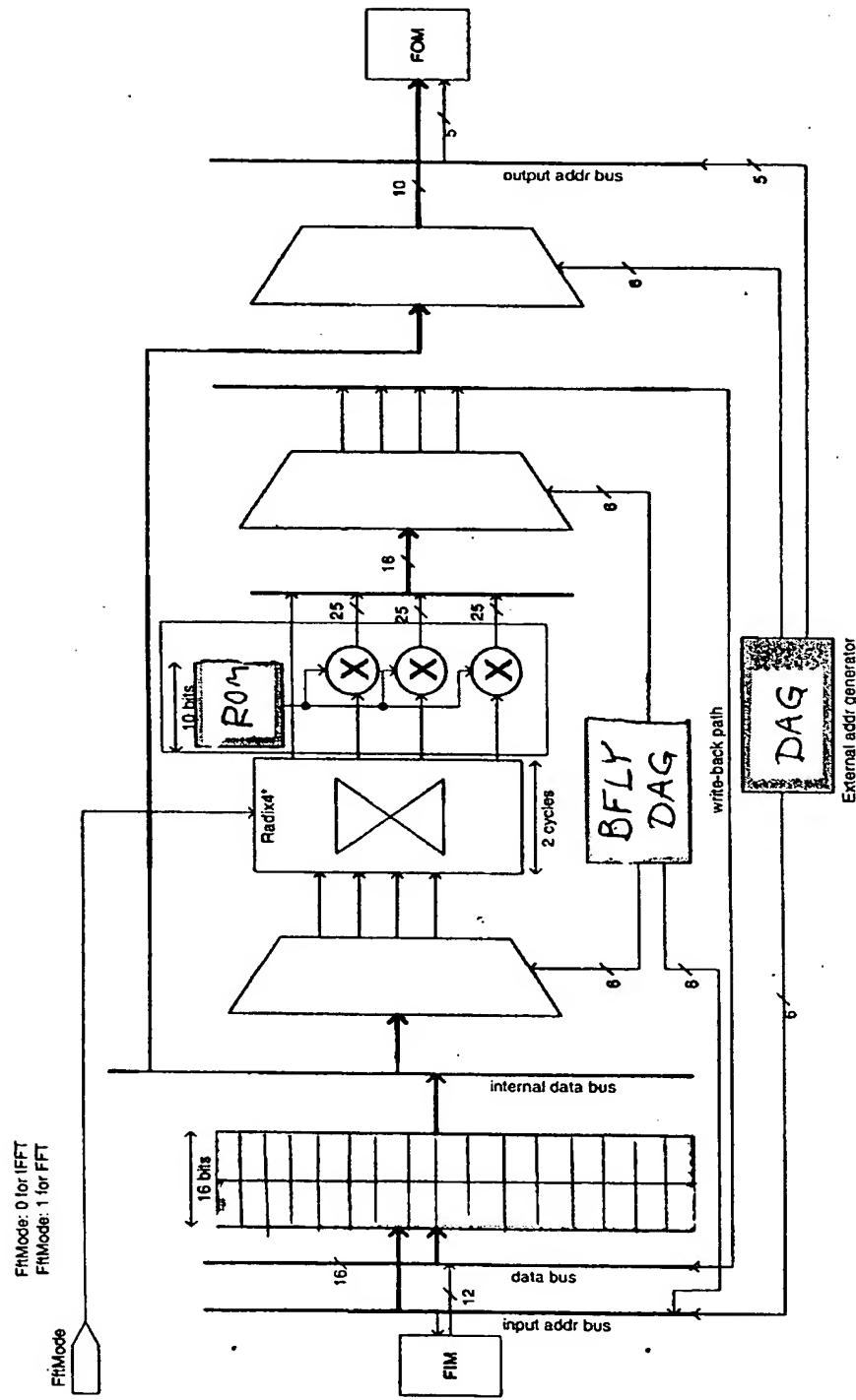


Figure 5